

**WHAT IS CLAIMED IS:**

1. A flash memory data structure, comprising:

fixed length cells, each having:

a control and identifier section for containing a unique identifier and a cell count for logically associating multiple of said fixed length cells, and

a data section for containing only a configuration value pertaining to said unique identifier.

2. The data structure recited in Claim 1 wherein said unique identifier is one byte long.

3. The data structure recited in Claim 1 wherein one of said fixed length cells equals a minimum storage space for said configuration value.

4. The data structure recited in Claim 1 wherein said fixed length is determined based on optimizing storage space of said data structure.

5. The data structure recited in Claim 1 wherein said fixed length cells are 32 bytes long, said control and identifier section is 4 bytes long and said data section is 28 bytes long.

6. The data structure recited in Claim 1 wherein said data  
2 section is located at an end of said fixed length cells.

7. The data structure as recited in Claim 1 wherein a length  
2 of said fixed length cells is configurable by a programming macro.

8. The data structure as recited in Claim 1 wherein a size  
2 of said data structure is configurable by a programming macro based  
3 on a manufacturing stage of development.

9. The data structure as recited in Claim 1 wherein said  
2 unique identifier corresponds to a configuration parameter in a  
3 lookup table.

10. The data structure as recited in Claim 1 wherein  
2 multiples of said unique identifier correspond to greater than 254  
3 configuration parameters.

11. The data structure as recited in Claim 1 wherein said  
2 control and identifier section is configurable such that said  
3 unique identifier and said cell count are located in subsequent  
4 bytes at the beginning of said control and identifier section.

12. A flash memory controller for imposing on a flash memory  
2 the data structure as recited in Claim 1.

13. A flash memory controller for imposing on a flash memory  
2 the data structure as recited in Claim 2.

14. A flash memory controller for imposing on a flash memory  
2 the data structure as recited in Claim 3.

15. A flash memory controller for imposing on a flash memory  
2 the data structure as recited in Claim 4.

16. A flash memory controller for imposing on a flash memory  
2 the data structure as recited in Claim 5.

17. A flash memory controller for imposing on a flash memory  
2 the data structure as recited in Claim 6.

18. A flash memory controller for imposing on a flash memory  
2 the data structure as recited in Claim 11.

19. A flash memory containing the data structure as recited  
2 in Claim 1.

20. A flash memory containing the data structure as recited  
2 in Claim 2.

21. A flash memory containing the data structure as recited  
2 in Claim 3.

22. A flash memory containing the data structure as recited  
2 in Claim 4.

23. A flash memory containing the data structure as recited  
2 in Claim 5.

24. A flash memory containing the data structure as recited  
2 in Claim 6.

25. A flash memory containing the data structure as recited  
2 in Claim 11.

26. A method of writing to flash memory with fixed length  
2 cells, comprising:

3        locating a first of said fixed length cells that is free;  
4        writing a unique identifier in a control and identifier  
5 section of said first free fixed length cell;

6        writing a configuration value pertaining to said unique  
7 identifier in a data section of said first free fixed length cell;  
8 and

9        updating a cell count in said control and identifier section  
10 to represent a number of said fixed length cells logically  
11 associated.

27. The method as recited in Claim 26 further including  
2 locking interrupts and updating a checksum of said configuration  
3 value in said control and identifier section.

28. The method as recited in Claim 26 further including  
2 searching said flash memory for a pre-existing configuration value  
3 having said unique identifier and marking said pre-existing  
4 configuration value as deleted.

29. The method as recited in Claim 26 further including  
2 updating a global variable during system initialization with an  
3 address of a first of said fixed length cells that is free.

30. The method as recited in Claim 29 further including  
2 testing said configuration value to determine completeness.

31. The method as recited in Claim 30 further including  
2 updating said cell count and marking said configuration value  
3 as deleted when determining said configuration value is not  
4 complete; and  
5 updating said cell count and a checksum of said configuration  
6 value when determining said configuration value is complete.

32. The method as recited in Claim 31 further including  
2 validating checksums of each of said fixed length cells.

33. A method of searching for data in flash memory with fixed  
2 length cells, comprising:  
3 locating a first of said fixed length cells that is free; and  
4 locating said data by searching downward from said first free  
5 fixed length cell to other fixed length cells having a lower  
6 address thereof.

34. The method as recited in Claim 33 wherein said data is  
2 configuration data.

35. The method as recited in Claim 33 wherein said data is  
2 located in a data section at the beginning of said fixed length  
3 cells.